Reply to the Office Action dated February 09, 2004

In the Office Action Summary dated Feb. 09 you mentioned the reasons of claims rejection as outlined under sections 10-12 of your correspondence. With reference to our conversation that we had on February 19th I would like to clarify the following points.

1. Mallory in Pub. No. US 2002/0042836 teaches under para 0321, pages 20-21

"[0321] The Capability and Status Announcement aspect in accordance with the present invention is now described more fully. A mechanism is defined for network-wide negotiation, capability discovery and status announcement. It is based on periodic broadcast announcements, called **Capabilities and Status Announcements (CSA)** sent in CSA **Control Frames (CSACFs)**. The defined status flags allow determination of the station's HPNA version, optional feature support, and link-layer priority usage, as well as communication of network configuration commands. The purpose of the protocol is to distribute to all stations the complete set of status flags in use on the network, so that stations can make operational decisions based on those flags with no further interaction. Stations use the CSA Control Frame as shown in FIG. 45 and the CSA Flag definitions as shown in FIG. 46. **Stations send a CSA Control Frame once per minute or when a change in the station's current status requires the announcement of new (or deleted) flags**. A station sending a CSA Control Frame announcing a status change sends a second copy of the most recent CSACF a short interval after the first, since it is always possible to lose a frame due to temporary changes in the channel, impulse noise, etc. The interval is randomly selected (not simply fixed), and chosen from the range 1 to 1000 milliseconds, inclusive. CSA Control Frames are sent with a priority corresponding to Link Layer priority 7. CSA Control Frames are always sent to the Broadcast address(0.times.FFFFFFFFFFFF). The PE for a CSA control frame is determined by accessing the RRCF logical channel information for the broadcast channel. A Request op-code is defined to allow a station to quickly gather complete information about all stations. Upon receiving a CSA control frame with the Request opcode, a station transmits a current CSA message after a delay of a short interval, using the same mechanism (and parameters) that delays the second copy of CSA announcements, described above. Referring to FIG. 45, the first three fields beyond the Ethernet header comprise the standard header for short format control frames. Referring to FIG. 46,. flags are used for CSA_CurrentTxSet, CSA_OldestTxSet, and CSA CurrentRxSet in Capabilities and Status Announcement control frames. Thirty-two bit-flags are supported for announcing status and configuration information. The flags are divided into three basic groups: mode selection flags including HPNA version information, supported options, and in-

use Tx link layer priority announcements. These flags are added to the global state as soon as announced, and removed when no longer announced by any station, either through explicit deletion or by timing them out. An in-use Tx link layer priority will be announced for a period of one to two minutes after the last frame actually sent with the priority, until the aging mechanism causes it to be deleted from CurrentTxSet. The default set of status flags, used to initialize the NewTxSet (defined below), is defined to be the priorities 0 and 7, the station's HPNA version, and any supported options. The basic time interval used to age out non-persistent status information is one minute. Each station has a repeating timer set to this interval. The timers in different stations are not synchronized, and synchronization is avoided. The description below refers to the time between one expiration of this timer and the next as a "period". The "current" period refers to the time since the most recent expiration of the timer. A CSA frame is sent at the end of each interval. FIGS. 47 and 48 depict variables and timers respectively. Each station maintains five basic sets of status and priority information, as shown in FIG. 49. In addition, three more composite sets are defined as the union of two or more of the basic sets, as shown in FIG. 50. The composite sets are kept in sync with their component basic sets."

2. As cleared from the above discussion Mallory is specifically referring to a Control Frame (Capabilities & Status Announcement; CSA frame) and not a user data-link layer frame as claimed in my invention. Please note that I have amended the claims to specifically include the phrase **user data-link layer frame** in it.
3. In FIG. 45 Mallory specifically defines different fields located from the FCS field at the end. As seen from the said FIG she uses a PAD Field that can have variable number of bytes in it. This means that the exact location of the other defined Fields with respect to FCS can be variable and **NOT** fixed as claimed in my invention.

Mallory in the same Pub. No. US 2002/0042836 teaches under para 0122-0141, pages 7

[0122] In accordance with a preferred embodiment of the present invention PHY 320 uses 4 MBaud QAM modulation and 2 MBaud Frequency Diverse QAM (FDQAM), with 2 to 8 bits-per-Baud constellation encoding, resulting in a PHY-layer payload modulation rate that ranges from 4 Mb/s to 32 Mb/s. The modulation techniques are set forth in U.S. Pat. application No. 09/169,552 entitled "Frequency Diverse Single Carrier Modulation For Robust Communication Over In-Premises Wiring", which is incorporated herein by reference. Information is transmitted on the transmission medium/channel in bursts. Each aburst or physical layer frame consists of PHY-layer payload information encapsulated with a PHY preamble, header and postamble. The PHY-layer payload in each physical frame is that part of the Ethernet Link Level frame that follows the Ethertype field through the

Frame Check Sequence (FCS), plus a CRC-16 and a pad field for the 4 Mbaud rate. Hereafter, "payload" refers to the PHY-layer payload unless otherwise specified.

[0141] The 16 bits of the CRC are placed in the CRC-16 field so that x.sup.15 is the least significant bit of the first octet, and the x.sup.0 term is the most-significant bit of the last octet. (The bits of the CRC are thus transmitted in the order x.sup.15, x.sup.14, . . . x.sup.1, x.sup.0.) The CRC-16, in conjunction with Ethernet's FCS, provides for more protection from undetected errors than the FCS alone. This is motivated by environmental factors that will often result in a frame error rate (FER) several orders of magnitude higher than that of Ethernet, making the FCS insufficient by itself. For 4 MBaud payloads, a variable-length PAD field 646 follows CRC field 644 and consists of an integer number of octets. The last octet of the pad field (PAD_LENGTH) specifies the number of zero octets (0.times.00) preceding PAD_LENGTH. The value of PAD_LENGTH must equal or exceed the number of zero octets required to ensure that the minimum length of the transmission, from the first symbol of the PREAMBLE64 through the last symbol of the end of frame delimiter, is 92.5 microseconds. For 2 MBaud payloads, there is no PAD field. The PAD field is not present in a Compatibility Mode Frame, as described below. An example of a compliant formula for generating PAD_LENGTH is max (102-N,0), where N is the number of octets from DA to FCS, inclusive. This ensures that a collision fragment can be discriminated from a valid frame by the transmission length detected by the carrier sense function, as described below. The next field is End of Frame (EOF) Delimiter field 648. The End-of-Frame sequence consists of the first 4 symbols of the TRN sequence, or 0xfc encoded as 2 bits-per-Baud at 2 Mbaud. This field is provided to facilitate accurate end-of-carrier-sensing in low-SNR conditions. A station demodulating a frame can use this field to determine exactly where the last payload symbol occurred.

4. As can be seen from the above discussion Mallory talks about different modulations, (e.g. 4 MBaud QAM modulation and 2 MBaud Frequency Diverse QAM (FDQAM) etc.) and how these schemes can be transmitted over the control frames and **<u>NOT over the user data frames</u>** as specifically I have included in the amended claims.
5. In addition, I specifically make reference to the procedure where the CRC field is **<u>not calculated in advance</u>** for a data-link layer frame intended for transmission, as Mallory described. In my invention, CRC or FCS field is dynamically updated and calculated as **<u>each individual byte</u>** is transmitted by a data-link layer device or switch conformed to my proposed invention.